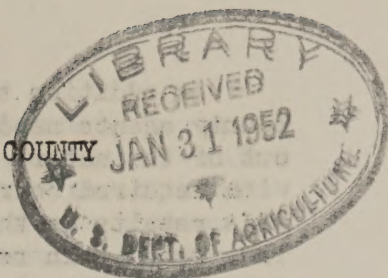


A METHOD FOR DETERMINING THE TRAINING NEEDS OF COUNTY  
AGENTS AS THE BASIS FOR PLANNING  
TRAINING PROGRAMS



County Agents--county agricultural agents--are teachers in an out-of-school system of education in which adults and young people learn by doing. They are employees of the Agricultural Extension Service which is an institutionalized partnership between the Federal government, the land-grant college, and the local people through their county governing boards. The extension service provides services and education designed to meet the needs of people. The fundamental objective of the extension service is to develop the people through teaching them better methods of farming and home-making. As a part of this over-all objective it develops leadership among the people and aids them in learning to solve their own problems individually and through democratic group processes.

Purpose of the Investigation

This study in a measure is a pilot undertaking because it is a new approach to a problem which has been attacked in other studies. Its general purpose is to analyze the training needs of county agents in a way which will give a more specific and precise indication of them in terms which can guide the development of training programs.

Training for the purpose of this study means:

-- to teach an extension worker so that he will be fitted, qualified, and proficient to do his extension job. This has a wider meaning than the training received in operational activities.<sup>1</sup>

Objectives of the Study

The study had three main objectives. The first was to develop criteria or a list of essential knowledges, skills and attitudes that are needed by county agents. The second problem was to test the validity of the criteria by obtaining the opinions of the county agents as to their importance, and third, to measure the training needs of the county agents in Texas in terms of the criteria developed.

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<sup>1</sup>Cannon C. Hearne, "Training Extension Personnel--National Viewpoint." Paper presented at joint session of Extension Resident Teaching Agriculture, Resident Teaching Home Economics Sections, and Graduate Council during Land-Grant College Association Conferences, November 10, 1948.



## Need for Training

In addition to a 4 year college course leading to a degree in agriculture county agents need special training for their work. First, this need arises out of the nature of the curriculum in technical agriculture which is filled with required courses limiting the opportunity for study in other fields. This results in the students' taking technical subjects almost exclusively. The second main reason why more training is needed results from the changing nature of extension teaching. A committee of extension workers--which is known as the Kepner Committee--representing a cross section of the personnel of the Federal Extension Service said:

It is to be noted that this basic legislation, enacted nearly a third of a century ago, emphasizes the vocational aspects of Extension's educational functions. However, this act and related acts have been popularly interpreted to include more than the strictly vocational aspects of education. In the early days of cooperative extension work, educational efforts were directed largely to specific farm and home operational problems. However, as the needs and desires of local people make themselves felt, and as forces of a more complex nature affecting the welfare of farm people come to be more clearly appreciated, the recognized boundaries of the field of Extension's educational responsibility must continue to be moved outward. The forces of public opinion and public desire, therefore, are at least equally as significant as the early interpretations of the original enabling legislation in determining the fields of interest in relation to which Extension should render educational assistance.<sup>1</sup>

An examination of the present program as to the relative emphasis given the nine areas of educational responsibility in the Kepner Committee<sup>2</sup> report reveals a third reason why more training is needed. Time devoted by county extension workers was classified according to the nine areas and expressed in per cent. It was found that one-third of the extension workers' time was spent on agricultural production alone while all seven other areas received from 12 per cent to as low as 0.3 per cent of the agent's time. Rural organization and leadership took about one-fifth of the time, thus half of the agent's time was spent on two of the nine areas in 1948.<sup>3</sup>

If the county agents are to discharge the responsibilities set forth in the Kepner Committee Report, then they must have training in the social sciences which will prepare them with the teaching abilities and the knowledge they need.

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<sup>1</sup>P.V. Kepner, Chairman, et al, Report of Committee on the Scope of Extension's Educational Responsibility, p. 2, Extension Service, United States Department of Agriculture, January, 1936. (Mimeographed)

<sup>2</sup>Ibid.

<sup>3</sup>Annual Report Federal Extension Service, Washington 1948 and Annual Report Texas, Agricultural Extension Service, College Station, 1948.



## Procedures in Making the Study

Since one purpose of the study was to develop comprehensive criteria for the training of county agents, sources for these criteria were needed which would give more than one point of view and which resulted from the thinking of groups of people rather than individuals working alone. Three written documents were found which would serve. The first was "Report of Committee on the Scope of Extension's Educational Responsibilities"<sup>1</sup> which was written by a committee of ten extension workers in the Federal Extension Service. The second source was "Training Extension Workers for the Job"<sup>2</sup> by M. C. Wilson in which the duties of county agents were described. The job descriptions contained in Wilson's publication were prepared by groups of extension workers enrolled in summer extension courses. The third source of expert opinion was the "Joint Committee Report on Extension Programs, Policies and Goals."<sup>3</sup> This third source contains a section dealing with goals for training extension workers. The report was prepared by a committee of ten persons representing the Association of Land-Grant Colleges and Universities and the United States Department of Agriculture.

The statements contained in the sources named above were re-stated in terms of knowledge, skill and attitude items which they implied for county agents. The next step was to check on the validity of the items inferred from the original sources. It was assumed that the original authors would be the best judges of the validity of the items. These people were asked to check the list of items inferred from the original source which they had helped prepare and to indicate the appropriateness of items on the list.

After the changes suggested by the original authors were made, the next step was to reduce the 440 items to the minimum number which would encompass all of the ideas expressed in the items which were inferred from the three sources. A list of sixty-seven items resulted from this process.

The next step was to check the list of items for practical comprehensiveness. A jury of nine competent persons examined the items to see if they were the most important ones, if all the most important items were included and if they were stated properly. As a result of this process four more items were added making 71.

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<sup>1</sup>Kepner, op. cit.

<sup>2</sup>Wilson, M. C. Training Extension Workers for the Job, Extension Service, Circular 315, USDA, Washington, 1938. (Mimeographed)

<sup>3</sup>Joint Committee Report on Extension Programs Policies and Goals, USDA and Association of Land-Grant Colleges and Universities, Government Printing Office, Washington, 1948.



When the list was ready the next step consisted of devising a means of finding out from the county agents how important they considered the items. To do this it was necessary to express the items in terms which are commonly used by extension workers. After this was done, a device for obtaining the responses of the county agents was needed. A response device like the following was used on the questionnaire:

a. How important is this to a county agent? (X one answer.)

- ☐ Very important
- ☐ Important
- ☐ Not sure
- ☐ Little importance
- ☐ No importance

To aid in obtaining objective responses, it was decided to place a statement regarding the use to be made of the information at the top of the first page of the questionnaire.

To further insure the county agents' understanding of the use to be made of the questionnaire, an introductory statement was made to each group of agents at the time the questionnaires were presented. A summary was given of the extension personnel training activities since 1945. It was explained that information from the questionnaires would be the basis for future training programs particularly for new extension workers.

By the use of examples a check was provided whether or not the county agents understood the questions as they were intended. Half of the questionnaires had typical examples for each question and half did not. A specimen question follows:

22. Familiarity with the principles and methods of good program development.

A typical example: Be familiar with extension program planning procedures used in the state.

The questionnaires were pretested by having seven state extension headquarters staff members fill them out and suggest anything which would be detrimental to the purposes of the study.

It was planned to include as many as possible of the 310 Texas county agents in the sample. Questionnaires were completed by 91 per cent or 282 county agents in 15 meetings held in as many different places. The questionnaires were administered in meetings scheduled mainly for other purposes, therefore, about nine months elapsed between the dates of the first and last meetings.



TENURE OF COUNTY AGENTS COMPLETING QUESTIONNAIRES  
 COMPARED WITH THOSE WHO DID NOT

Length of Tenure	Per Cent Completing Questionnaires	Per Cent Not Completing Questionnaires
Under five years	49	49.0
Five and under ten	19	23.1
Ten and under fifteen	9	10.0
Fifteen and under twenty	10	2.6
Twenty and under twenty-five	6	5.1
Twenty-five and under thirty	6	5.1
Thirty and over	1	5.1
Total	100	100.0
Total number of agents	282	39

Tabulation of the data was with IBM electric cards and machines. Two kinds of data were tabulated -- information about the county agents from the Texas Extension Service personnel files and the responses of the county agents. Tabulation continued over a period of about two months due to having the use of the machines only part-time.

All of the questionnaires were usable. Only two of the 71 items were omitted by as many as 3 agents -- roughly one per cent. Discrimination in rating of the items was mostly between the highest rating or "very important" and the second highest "important." The problem of analyzing the ratings was one of devising a way to give proper weight to the various ratings in ranking the items according to their importance. A single score was needed which would fairly represent the importance of each item in the opinions of the county agents.

A rating score was calculated for each item by assigning a positive value of 2 to ratings of "very important" and 1 to ratings of "important," while "not sure" was given no weight, and a negative value of -1 was given to "little importance" and -2 to "no importance." This weighting method resulted in scores ranging from 71 to 533 with an average score of 231. For the purpose of analysis, a score of 266 or less was taken as the basis for questioning whether the item should be included in any list of criteria. The nine items with scores below 266 fell into two general groups. First were the items which would not be affected by subject-matter, the examples or extension operational procedures. Second, there were items the importance of which could be expected to vary according to the type of agriculture, program emphasis and operating



procedures. An item by item analysis revealed that the two items in group one probably were affected by extraneous factors such as the wording of the item, the examples used and previous experiences of the agents.

It will be seen from the following table that the county agents rated items of both skill and attitude higher than knowledge items.

RATINGS CLASSIFIED ACCORDING TO RATING SCORES  
AND NATURE OF THE ITEMS

Range of Scores	Number of Knowledge Items	Number of Skill Items	Number of Attitude Items
50- 99	1	0	0
100-149	0	0	1
150-199	0	0	0
200-249	3	0	0
250-299	8	1	1
300-349	4	2	0
350-399	5	1	1
400-449	9	3	3
450-499	8	8	6
500 and over	0	3	3
Total	38	18	15

#### Validity and Reliability

Every effort was made in planning and conducting this study to develop valid items from the original sources, and to obtain valid and reliable responses from the agents. Validity involved first, adequacy of the items as a sample of the competencies of the county agents. Validity was established by using the ideas of the experts, suggestions of a jury, and the county agents rating of the items. Second, wording of the items was checked by a jury and seven state extension staff members. Simultaneous use of two forms of the questionnaire and obtaining a rank correlation coefficient of .967 gave further assurance that the meaning of the items was clear. Third, duplication of items was eliminated by checking with a jury. Fourth, an honest response was obtained by emphasizing the value of the results for the training of new county agents.

The validity of certain items -- particularly knowledge items -- will vary somewhat from state to state due to differences in type of farming, kind of agricultural production, the concept of extension education and the traditional pattern of extension program. If we accept the responses of the agents as a measure of validity, then we can say that in general the list of items is a good one, although a few items are of doubtful value.



Reliability of the results was estimated by using two forms assumed to be equivalent and calculating the rank correlation coefficient. Using two forms had the advantage of eliminating opportunity for discussion and avoiding the effect of memory.

#### Measuring Relationships between Background Factors and Responses

An attempt was made to measure the correlation between the responses and sixteen different factors. Some inconsistencies give rise to questions regarding the suitability of the data for statistical manipulation. A correlation coefficient of .120 was required for significance at the 5 per cent level and .156 at the one per cent level. The correlation results were as follows:

Personnel evaluation and quality of college record	.226
" " " appraisal of performance in 1946	.375
" " " classroom teaching experience	.193
" " " other agricultural experience	-.270
" " " temure	.557
" " " graduate courses completed	.153
" " " general psychology courses taken	.711
" " " method of induction	.034
Temure and quality of college record	.289
" " teaching experience	.492
" " agricultural background	-.300
" " other agricultural experience	-.262

#### Relationship of Responses and Personnel Evaluations

In 1949, a personnel evaluation program was initiated under which three or more persons evaluate the work of each extension worker every two years. The ratings for each of the four areas — working relationships and method, the program, personal qualifications and results — were converted to single numerical ratings which ranged from 10 to 20. For the purpose of comparing the responses, actual scores were converted on the basis of 94 as shown in the table.

#### COMPARISON OF RATING SCORES CLASSIFIED ACCORDING TO CERTAIN PERSONNEL EVALUATION SCORES

Evaluation scores	12	13	14	15	16	17
Number of county agents in class	40	24	25	26	94	20
Weighting factor	x 2.35	x 3.92	x 3.62	x 3.62	x	x 4.7
Average score	126.9	129.6	149.0	125.4	136.6	144.4



Generally the agents, with personnel evaluations toward the upper end of the scale, tend to rate the items higher than those with personnel evaluations on the lower end of the scale.

### Ratings of Social Science Items

Items in the area of the social sciences for the purpose of analysis were classified according to the appropriate subject -- economics, sociology, education and extension methods. Average rating scores were calculated for the four kinds of items and these serve to emphasize the greater importance of social science training as compared to agricultural subject-matter in the opinions of the county agents.

#### SOCIAL SCIENCE ITEMS CLASSIFIED ACCORDING TO KIND OF SUBJECT MATTER

Subject	Number of Knowledge Items	Number of Skill Items	Number of Attitude Items	Average Scores for All Items
Economics	4	1	0	378
Sociology	2	5	3	420
Educational Methods	1	7	1	433
Extension Methods	9	5	11	416

### Conclusions and Implications

The conclusions which follow are based on the evidence developed in the study:

1. The list of knowledge, skill and attitude items generally is a good one and provides satisfactory criteria for measuring the training needs of county agents.
2. Most of the items will apply to county agents anywhere. Validity will vary most with respect to items of knowledge depending upon the variations in current and traditional program emphasis between states.
3. A valid list of items for this state should not contain items 12, 26, 28, 29, 30, 33, 34, 38, and 40, and it appears that the other 62 items should remain on the list of items to be used as criteria for the training of county agents.



4. The ratings of the items by the county agents suggest that certain skills and attitudes have universal importance among county agents.
5. The importance of certain items of knowledge will vary from state to state and between areas within a state according to differences in the kind of agricultural production, differences in the county agents' concepts of the educational responsibilities of the extension service.
6. The generally high ratings of the items by the county agents are evidence of the general validity of the "Report of the Committee on the Scope of Extension's Educational Responsibilities."
7. The county agents attach more importance to training in the area of the social sciences than to any other area.
8. In general county agents are capable of judging their own training needs regardless of any deficiencies.
9. The procedures used in this study are suitable for use in studying the training needs of any other group of county agents.
10. A questionnaire such as the one used in this study is a satisfactory instrument for obtaining the opinions of county agents as to the importance of items.
11. Presentation of questionnaires to county agents in groups with and explanation of the purpose is a satisfactory technique for obtaining valid responses and a high per cent of completions.
12. With modification the procedure used in this study can be used to study the training needs of other kinds of extension workers.

The experience in using this study procedure suggests certain other conclusions:

1. The experts who have given thought to the training needs and who have analyzed the job are a satisfactory source of suggestions as to criteria.
2. The responses of the county agents for the most part validated the four sources of suggestions as to items used in the questionnaire.
3. The reliability of the responses to the items on the questionnaire was satisfactory as measured by the correlation between two different forms of the instrument administered simultaneously.

Generalizations made from these data are subject to their limitations for statistical manipulation, but they do suggest certain conclusions:

1. County agents with the highest personnel evaluation scores tend to be the individuals with the highest quality college records.
2. County agents with the highest personnel evaluation scores tend to be the county agents with longer tenure.



3. Individuals with higher personnel evaluations generally tend to be those who have completed some graduate college work.
4. The higher evaluation scores tend to be for individuals with some classroom teaching experience.
5. A negative relationship exists between the personnel evaluations and other agricultural experience.
6. County agents with longer tenure tend to be those agents with the higher quality college records.
7. A negative relationship exists between length of tenure and the agricultural background of the county agents.

#### Implications for Training in the Social Sciences

Traditionally, the agricultural college curriculum has emphasized technical agriculture, but the relatively greater importance of the social sciences in the opinion of the agents suggests that more training is needed in this area. To do this, courses will need to be added in the undergraduate curriculum at the graduate level. Courses are needed in educational principles and methods, economics and public policy, sociology, and extension methods.

#### Implications for Pre-Service Training

Courses are needed in the undergraduate college curriculum to teach the knowledge, the skills and foster the attitudes implied by the items. This does not necessarily mean the addition of new courses, but it does mean that present courses should be examined and reorganized whenever necessary.

No doubt many of the courses now offered are adequate to meet the needs of county agents. Others could be improved by the addition of some of the objectives implied by the list of criteria. Many of the same organizing elements should be included in both institutional and apprenticeship types of pre-service training.

#### Implications for In-Service Training

The training provided through supervision and other informal operational activities should be integrated with both formal and apprenticeship pre-service training so that all types contribute to the same objectives. Special coordinating and integrating techniques are needed in personnel procurement, training and supervision to meet the needs expressed in the criteria.



### Suggestions for Use of the Findings

The findings from this study can be used in seven main ways as follows:

1. As the basis for administrative policies and procedures for the improvement of personnel.
2. As the basis for supervisory procedures to improve extension personnel.
3. As the basis for implementing personnel improvement policies through coordinated effort of the subject-matter specialists.
4. As the basis for revision of the objectives of the apprenticeship training program.
5. As the basis for objectives for undergraduate and graduate college courses in extension.
6. As the basis for establishing minimum qualifications for new county agents.
7. As the source of suggestions for additional research in areas where the results of this study were not conclusive.



